

**CL 2710-2004 (Granted CL 43703)**

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**Abstract**

*To select a rate for data transmission in a multi-carrier MIMO system with a multipath MIMO channel, a post-detection SNR for each subband  $k$  of each spatial channel is initially determined and used to derive a constrained spectral efficiency based on a constrained spectral efficiency function of SNR and modulation scheme  $M$ . An average constrained spectral efficiency for all subbands of all spatial channels used for data transmission is next determined based on the constrained spectral efficiencies for the individual subbands/spatial channels. An equivalent SNR needed by an equivalent system with an AWGN channel to support a data rate of is determined based on an inverse constrained spectral efficiency function . A rate is selected for the multi-carrier MIMO system based on the equivalent SNR. The selected rate is the highest rate among all supported rates with a required SNR less than or equal to the equivalent SNR.*